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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,068	11/25/2003	David A. Cooper	5469-8	4161

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EXAMINER

SAMPLE, DAVID R

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/722,068

Applicant(s)

COOPER ET AL.

Examiner

David Sample

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

Any rejections and/or objections, made in the previous Office Action, and not repeated below, are hereby withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 102***

Claims 1-7 rejected under 35 U.S.C. 102(b) as being anticipated by Amiridis et al. (WO 95/15208).

Amiridis et al. discloses a zeolite Y (i.e., faujasite) having:

- A Si/Al ratio of 13.79 (i.e., a  $\text{SiO}_2/\text{Al}_2\text{O}_3$  ratio of 27.58),
- A unit cell size of 24.32 Å, and
- A total surface area of 845  $\text{m}^2/\text{gm}$  (i.e., a micropore surface area of 743  $\text{m}^2/\text{g}$  and a mesopore surface area of 102  $\text{m}^2/\text{gm}$ ).

These properties anticipate the relevant property recitations in claims 1, 3, and 7.

It is noted that the surface area of the reference is less than 875, 880, or 900  $\text{m}^2/\text{g}$ , however, each of these ranges are preceded by the word 'about' which broadens the range. In other words, the surface area of the reference is deemed to anticipate the claim 1, 3, and 7 range in view of the latitude in interpreting the word "about" in claims.

The recitations of instant claim 2 can be found in the reference at page 6, line 23.

The reference fails to disclose the micropore volume of the disclosed zeolite Y.

However, the zeolite product of the reference is indistinguishable from the presently claimed

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zeolite. Moreover, micropore volume and surface area are integrally related, and the reference discloses a surface area that is the same as the claimed surface area. For these reasons, the claimed micropore volume is assumed to be inherent to the zeolite of the reference.

***Claim Rejections - 35 USC § 103***

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amiridis et al. (WO 95/15208) as applied to claim 1 and further in view of Hamon et al. (WO 97/00723).

As noted above, Amiridis et al. discloses a zeolite that is indistinguishable from the zeolite of claim 1. Amiridis et al. does not teach employing the zeolite as a sorbant for polar and/or nonpolar compounds.

Hamon et al. discloses that dealuminated zeolite Y is useful adsorbing volatile organic compounds in the presence of steam (water). See the abstract.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed the zeolite of Amiridis et al. to sorb organic compounds from water, because Hamon et al. discloses that dealuminated zeolite Y is useful in such applications.

Claims 1-6, and 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al. (US Patent No. 5,242,677).

Cooper et al. discloses a zeolite Y having a  $\text{SiO}_2/\text{Al}_2\text{O}_3$  ratio of 40-70, a surface area of 700-900  $\text{m}^2/\text{gm}$ , and a unit cell size of 24.09-24.14 Å. See col. 4, lines 42-45. These ranges

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overlap the ranges for these properties recited in instant claims 1, 3, 4 and 10. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

The reference does not specifically disclose the method of measuring the surface area, however, lacking evidence to the contrary, one of ordinary skill in the art would expect to have the same surface area regardless of the method of measuring the surface area.

The recitations of instant claim 2 can be found in the reference at column 3, lines 10-13.

The reference does not disclose the properties of claims 5 and 6, however, one of ordinary skill in the art would expect that the zeolite of the reference would have the claimed properties because the remainder of the properties overlap, and the process recited in the reference performs the same steps as the present invention.

As to the method claims, Cooper et al. describes a method in which a zeolite Y having a  $\text{SiO}_2/\text{Al}_2\text{O}_3$  ratio of 4.5-5.5 is ion exchanged to a  $\text{Na}_2\text{O}$  level of 1-4%. See col. 3, lines 1-15. This zeolite is steam calcined at a temperature of 900-1300° F (i.e., 482-704° C) at a partial pressure of steam of 0.2-1 atm. See col. 2, lines 6-11. Lastly, the zeolite is acid treated. See col. 2, lines 45-49.

The alkali metal levels,  $\text{SiO}_2/\text{Al}_2\text{O}_3$ , and calcining temperature overlap the ranges recited in claims 10 and 11. Again, overlapping ranges have been held to establish *prima facie* obvious.

The recitations of instant claims 12-16 can be found in the reference at column 2, lines 45-49 and col. 3, lines 44-46.

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Claims 8, 9, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al. (US Patent No. 5,242,677) as applied to claims 1 and 10 and further in view of Hamon et al. (WO 97/00723).

As noted above, Cooper et al. discloses a zeolite that renders obvious the zeolite of claims 1 and 10. Amiridis et al. does not teach employing the zeolite as a sorbant for polar and/or nonpolar compounds.

Hamon et al. discloses that dealuminated zeolite Y is useful adsorbing volatile organic compounds in the presence of steam (water). See the abstract.

Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to have employed the zeolite of Amiridis et al. to sorb organic compounds from water, because Hamon et al. discloses that dealuminated zeolite Y is useful in such applications.

### ***Response to Arguments***

Applicant's arguments filed September 23, 2005 have been fully considered but they are not persuasive.

#### **Rejection over Amiridis et al. (WO 95/15208)**

Applicants argue that the examiner provided no authority for the assertion that "surface area and micropore are integrally related" and argue that the examiner's assumption of inherency is improper. This argument is not deemed persuasive. Initially, the examiner notes that independent claim 1 does not recite a micropore volume. However, as to the recitation as it is referred to in claims 6-9, inherency may be established by technical reasoning or by the use of a secondary reference. See MPEP 2112 IV. The examiner relies upon technical reasoning in the

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present instance. The reference describes a material with the same surface area. The surface area is a measurement of the particle surface and pore surface, with the pore surface being the major contributor to the value. If the material has the same surface area, the volume of pores must necessarily be the same.

Furthermore, the examiner notes MPEP 2112 V, which states that once the examiner provides a rationale tending to show inherency, the burden shifts to applicant to rebut the assumption.

Applicants appear to argue that zeolite having a surface area of  $845 \text{ m}^2/\text{g}$  does not suggest the present invention as a whole. In other words, the data point at  $845 \text{ m}^2/\text{g}$  does not teach the claimed ranges as a whole. This argument appears to misconstrue the rejection. It is the examiners position that the reference discloses a data point falling within the range that anticipates the range. See MPEP 2131.03 I. It is noted that the claimed ranges are greater than  $875 \text{ m}^2/\text{gm}$ . However, each of the claimed ranges is preceded by the word “about” which enlarges the range to encompass  $845 \text{ m}^2/\text{g}$ . If applicants were to delete the word “about” preceding the ranges of surface area, this rejection would be overcome.

Rejection over Cooper et al. (US Patent No. 5,242,677)

Applicants argue that no overlap exists between the reference and the claims. This argument is not deemed persuasive and not factually correct. Cooper et al. discloses a range of surface area of  $700\text{-}900 \text{ m}^2/\text{g}$  which overlaps the presently claimed ranges of surface area. Applicants point out that the surface area of claim 7 does not overlap the range of the reference. This argument is not deemed persuasive because the lower limit recited in claim 7 is “about

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900". The "about" enlarges the range to encompass values below  $900 \text{ m}^2/\text{g}$ . (It should be noted, however, that claim 7 was not rejected over Cooper et al. for reasons other than surface area, i.e., the unit cell size.)

Applicants specifically argue that the reference does not suggest the micropore volume recited in claims 5 and 6. For the reasons stated above, one of ordinary skill in the art would expect that the reference would have the recited property.

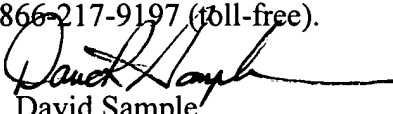
Applicants point out that the previous action did not address claims 8 and 9. The deficiency is noted and has been corrected above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Sample whose telephone number is (571)272-1376. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (572)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
David Sample  
Primary Examiner  
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